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10/509,286	09/23/2004	Wolfgang Keil	2002P05160WOUS	3698
29177 7590 05/12/2008 BELL, BOYD & LLOYD, LLP P.O. BOX 1135 CHICAGO, IL 60690			EXAMINER LI, GUANG W	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,286	Applicant(s) KEIL, WOLFGANG	
	Examiner Guang Li	Art Unit 2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-35 and 38-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-35 and 38-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/03/2008 has been entered.

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Remark date 01/03/2008.

3. Claims 20-35 and 38-41 are presented for examination.

Oath/Declaration

4. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in **37 C.F.R. 1.63**.

Priority

5. As required by **M.P.E.P. 201.14(c)**, acknowledgement is made of applicant's claim for priority based on applications filed on 03/27/2002 (Germany 10213862.1).

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **"update message in order to inform the other AAA servers the upper limits for the number of logical addresses that could be used by the first AA server between a next time period"**

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Response to Arguments

7. Applicant's arguments filed 01/03/2008 have been fully considered but they are not persuasive. The examiner maintains his rejection that Salama reference still teaches the amended limitation.

8. Applicant's argues the reference of Salama does not teaches the following limitations:

- further subsets in the updating message in order to inform the other AAA servers the upper limits for the number of logical addresses that could be used by the first AAA server between a next time period (The upper limits of number of logical address can use by Local server by expanding the increment size when other AAA servers unused addresses return to the global IP pool address "The high watermark 905 indicates an upper limit on the number of IP addresses in user before another subset is request" and "The increase increment size 920 indicates the number of IP addresses to request when IP address utilization exceeds the high watermark905) see col. 9 lines 16-18 and col. 9 lines 22-25).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. In claim 20, regarding the phrase "logical address that **could be** used by the first AA server between a next time period" in lines 13-14, it is unclear if the feature following the phrase "**could be**" is an required feature of the invention since the phrase "**could be**" makes optional but does not require the feature.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 20-23 and 34-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Salama et al. (US 7,197,549).

14. Regarding claim 20, Salama teaches a method for updating information in an AAA (authentication, Authorization, Accounting) server system (AAA server Fig.4 item 405), comprising:

regularly sending an updating message by a first AAA server (Edge router that manage the local IP address pools and interface with global IP address see Fig.3 item 300) of the AAA server system to all the other AAA servers of the AAA server system, wherein the updating message comprises information about changes, which have taken place since a previous updating message, of a status of subsets of an address pool which are assigned to the first AAA server (Whenever an edge router assigns an IP address to a remote user, it must insert a route to that user in a routing table designated for the remote domain. This update must be propagated to corresponding routing tables in each edge router in the network see col.2 lines 35-40);

estimating a number of logical address issuable by the first AAA server in time period between the updating message to be sent and a next-following updating message, in the first AAA sever, before the updating message is sent (local IP address monitor 840 monitors local IP address pool utilization and attempts to modify the size or number of subnets allocated to a local IP address pool based upon IP address utilization see col.8 lines 64-67);

determining further subsets of the address pool, to the first AAA sever (each pool of IP addresses is divided into per-remote domain local IP address pools on each edge router that is configured to accept PPP sessions from remote users of the remote domain. At 110, a determination is made regarding whether an IP address from a remote user has been received see col.2 lines 45-53), wherein the further subsets are determined according to the estimation (Local IP address pool: increase/decrease increment size see col.9 lines 21-31; Fig.9 item 925); and

including determined further subsets in the updating message in order to inform the other AAA servers the upper limits for the number of logical address (The upper limits of number of logical address can use by Local server by expanding the increment size when other AAA servers unused addresses return to the global IP pool address "The high watermark 905 indicates an upper limit on the number of IP addresses in user before another subset is request" and "The increase increment size 920 indicates the number of IP addresses to request when IP address utilization exceeds the high watermark905) see col. 9 lines 16-18 and col. 9 lines 22-25) that could be used by the first AAA server between a next time period (a Network Access Server (NAS) is

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configured so as to implement DHCP-like functionality with IP address pools so as to dynamically allocate IP addresses. The NAS distributes IP addresses to users (end-users of the Telco or ISP) when the users log-in. The NAS also revokes IP addresses when the users log-out, making those IP addresses available to other users see col.2 lines 10-19).

15. Regarding claim 21, Salama teaches the method in accordance with claim 20, wherein the estimation is made by forming the product of the maximum rate at which AAA server can process requests for the issues of the logical address and the time period between the updating message which is about to be sent and the next following update message (An apparatus for on-demand management of Internet Protocol (IP) address pools includes an allocator to allocate an unused IP address from a local IP address pool designated for a remote domain if a request to connect to the remote domain is received and a deallocator to deallocate an IP address back to the local IP address pool if the IP address is unused see col.4 lines 15-24).

16. Regarding claim(s) 22 and 23, Salama teaches checking by the first AAA server whether the address pool, which will be issued according to the estimate are available (Each pool is divided into subnets and these subnets are assigned to edge routers when requested see col.6 lines 29-33); and if the result of the checking by the first AAA server is negative (If the received subset size is not less than the requested subnet size, at 1445 a determination is made regarding whether the received subnet size is greater than the requested subnet size see col. 10 lines 49-67; Fig.13 and 14), assigning a subset of address pool assigned to another AAA server to the first AAA server

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(Whenever an edge router assigns an IP address to a remote user, it must insert a route to that user in a routing table designated for the remote domain. This update must be propagated to corresponding routing tables in each edge router in the network and maintaining routing information for each IP address is expensive with respect to network bandwidth consumption because each time an address is added or removed, the event must be broadcast so that other network entities know which edge router is handing the address see col.2 lines 33-40; col.2 line 61-65).

17. Regarding claims 34-35, Salama teaches wherein the TCP/IP protocol, the RADIUS protocol or the DIAMETER protocol is used as the transport protocol for the communication of updating messages (The RADIUS (Remote Authentication Dial In User Service) protocol is typically used to authenticate a user and to associate the user with a remote domain and associated routing table. Like DHCP, RADIUS can also be used to assign an IP address to a remote user see col.2 lines 4-8).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 24-33, and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salama et al. (US 7,197,549) in view of Gutman et al. (US 6,298,383).

20. Regarding 24 and 25, Salama teaches a method for updating information in an AAA (authentication, Authorization, Accounting) server system (Fig.4 item 405), comprising: regularly sending an updating message by a first AAA server (Edge router see Fig.3 item 300) of the AAA server system to all the other AAA servers of the AAA server system, estimating a number of logical address issuable by the first AAA server in time period between the updating message to be sent and a next-following updating message, in the first AAA sever, before the updating message is sent (see col.8 lines 64-67); determining further subsets of the address pool, to the first AAA sever (see col.2 lines 45-53), wherein the further subsets are determined according to the estimation (Fig.9 item 925); and including determined further subsets in the updating message in order to inform the other AAA servers which logical address could be used by the first AAA server between a next time period (see col.2 lines 10-19). Salama further teaches wherein the estimation is made by forming the product of the maximum rate at which AAA server can process requests for the issues of the logical address and the time period between the updating message which is about to be sent and the next following update message (see col.4 lines 15-24).

Salama does not explicitly disclose AAA server wherein the event of the failure of the first AAA server, the subsets of the address pool which are assigned to the first AAA server are assigned to a second AAA server.

Gutman teaches wherein the event of the failure of the first AAA server, the subsets of the address pool which are assigned to the first AAA server are assigned to a second AAA server (The system services may also be distributed over two or more servers to provide improved performance and redundancy see col. 7 lines 6-16).

Gutman further provides the advantage of a single database maintained central hosts both proxy service data and authentication, authorization and accounting data.

It would have been obvious to one of ordinary skill in the art, having the teachings of Salama and Gutman before them at the time the invention was made to modify the AAA server system of Salama to include assigned to the first AAA server are assigned to a second AAA server as taught by Gutman.

One of ordinary skill in the art would have been motivated to make this modification in order to provide redundancy services to the AAA system incase of failure events in view of Gutman.

21. Regarding claim 26, Salama together with Gutman taught AAA server system according to claim 24, as described above. Salama further teaches the method in accordance with claim 24, wherein the second AAA server is determined according to a priority list of AAA servers (Global IP Address Pool Manager keeps lists of Edge router (Provide local IP address pool to the subset) see Fig.3 Item 300 and 305).

22. Regarding claims 27 and 28, Salama teaches AAA (authentication, Authorization, Accounting) server system (Fig.4 Item 405), comprising: regularly sending an updating message by a first AAA server (Edge router see Fig.3 item 300) of the AAA server system to all the other AAA servers of the AAA server system, estimating a number of

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logical address issuable by the first AAA server in time period between the updating message to be sent and a next-following updating message, in the first AAA sever, before the updating message is sent (see col.8 lines 64-67); determining further subsets of the address pool, to the first AAA sever (see col.2 lines 45-53), wherein the further subsets are determined according to the estimation (Fig.9 item 925); and including determined further subsets in the updating message in order to inform the other AAA servers which logical address could be used by the first AAA server between a next time period (see col.2 lines 10-19). Salama further teaches where the further subsets of address pool will not be used for issuing of logical address, at least for a period time (client chooses and accepts one offer, and the chosen DHCP server sends an acknowledgement with the offered IP address having an associated "lease" time (and any other configuration parameters the client might have requested). During the lifetime of the lease, the client will repeatedly ask the server to renew. If the client chooses not to renew or if the client machine is shut down, the lease eventually expires. Once the lease expires, the IP address can be "recycled" and given to another machine see col.1 lines 61-67 and col. 2 lines 1-3).

Salama does not explicitly disclose wherein the subsets of the address pool which are assigned to the first AAA server are assigned to a second AAA server.

Gutman teaches wherein the event of the failure of the first AAA server, the subsets of the address pool which are assigned to the first AAA server are assigned to a second AAA server (The system services may also be distributed over two or more servers to provide improved performance and redundancy see col. 7 lines 6-16).

Gutman further provides the advantage of a single database maintained central hosts both proxy service data and authentication, authorization and accounting data.

It would have been obvious to one of ordinary skill in the art, having the teachings of Salama and Gutman before them at the time the invention was made to modify the AAA server system of Salama to include assigned to the first AAA server are assigned to a second AAA server as taught by Gutman.

One of ordinary skill in the art would have been motivated to make this modification in order to provide redundancy services to the AAA system incase of failure events in view of Gutman.

23. Regarding claim 29, Salama together with Gutman taught AAA server system according to claim 27, as described above. Salama further teaches wherein the length of the time period is determined using a maximum permissible connection time (Lease time "client chooses and accepts one offer, and the chosen DHCP server sends an acknowledgement with the offered IP address having an associated "lease" time (and any other configuration parameters the client might have requested). During the lifetime of the lease, the client will repeatedly ask the server to renew. If the client chooses not to renew or if the client machine is shut down, the lease eventually expires. Once the lease expires, the IP address can be "recycled" and given to another machine" see col.1 lines 61-67 and col. 2 lines 1-3).

24. Regarding claims 30, Salama together with Gutman taught AAA server system according to claim 20, as described above. Salama further teaches rebooting a second AAA server; transmitting a multicast message to all the other AAA servers of the AAA

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server system by the second AAA server (maintaining routing information for each IP address is expensive with respect to network bandwidth consumption because each time an address is added or removed, the event must be broadcast so that other network entities know which edge router is handing the address see col.2 line 61-65), wherein the multicast message requests the dispatch of updating messages and the assignment of subset of the address pool to the first AAA server (Whenever an edge router assigns an IP address to a remote user, it must insert a route to that user in a routing table designated for the remote domain. This update must be propagated to corresponding routing tables in each edge router in the network see col.2 lines 35-40).

25. Regarding claims 31-33, they are rejected for the same reason as claim 30 as set forth hereinabove.

26. Regarding claim 38, Salama teaches an AAA (Authentication, Authorization, Accounting) server system comprising

a pool of logical addresses (Global/Local IP address pool see abstract; Fig.3 item 360 and 380),

a plurality of disjoint subsets of the address pool (Each pool of IP address is divided into per-remote domain local IP address pools on each edge router that configure to accept PPP sessions from remote users of the remote domain see col.2 lines 44-48), wherein

each of the disjoint subsets is assigned to exactly one AAA server (Each edge router includes at least one local IP address pool designated for a remote domain see col.3 lines 3-16), and wherein

the logical addresses of each of the subsets are assigned to a terminal device only by the extract one AAA server (terminal device as NAS access "The request includes a remote domain ID, a NAS port and a requested subnet size" see col.7 lines 43-50; Fig.5).

Salama does not explicitly disclose at least three AAA servers for administrating the pool of logical address such that each of the servers provides redundancy to each others.

Gutman teaches at least three AAA servers for administrating the pool of logical address such that each of the servers provides redundancy to each others (The system services may also be distributed over two or more servers to provide improved performance and redundancy see col. 7 lines 6-16).

It would have been obvious to one of ordinary skill in the art, having the teachings of Salama and Gutman before them at the time the invention was made to modify the AAA server system of Salama to include at least three AAA servers for administrating the pool of logical address such that each of the servers provides redundancy to each other as taught by Gutman.

One of ordinary skill in the art would have been motivated to make this modification in order to provide redundancy services to each other incase of failure events in view of Gutman.

27. Regarding claims 39, Salama together with Gutman taught AAA server system according to claim 38, as described above. Salama further teaches wherein a portion of

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the disjoint subset assigned to one of the AAA servers is reassigned to a different AAA server (a Network Access Server (NAS) is configured so as to implement DHCP-like functionality with IP address pools so as to dynamically allocate IP addresses. The NAS distributes IP addresses to users (end-users of the Telco or ISP) when the users log-in. The NAS also revokes IP addresses when the users log-out, making those IP addresses available to other users see col.2 lines 10-19).

28. Regarding claims 40, Salama together with Gutman taught AAA server system according to claim 39, as described above. Salama further teaches wherein the reassignment is in response to a shortage of unassigned logical address at the different AAA server (increase/decrease increment size see col. 9 lines 21-31; col. 10 lines 56-67; Fig.14).

29. Regarding claims 41, Salama together with Gutman taught AAA server system according to claim 38, as described above. Salama further teaches

estimates a number of logical addresses issuable by the respective AAA server in a time period between receiving updating messages (local IP address monitor 840 monitors local IP address pool utilization and attempts to modify the size or number of subnets allocated to a local IP address pool based upon IP address utilization see col.8 lines 64-67)

determines, according to the estimation, further subsets of the address pool assigned to the respective AAA server (each pool of IP addresses is divided into per-remote domain local IP address pools on each edge router that is configured to accept PPP sessions from remote users of the remote domain. At 110, a determination is made

regarding whether an IP address from a remote user has been received see col.2 lines 45-53), and

transmits to each of the AAA an updating message comprising the determined further subset (Whenever an edge router assigns an IP address to a remote user, it must insert a route to that user in a routing table designated for the remote domain. This update must be propagated to corresponding routing tables in each edge router in the networks see col.2 lines 35-40).

Conclusion

The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See **MPEP 707.05(c)**.

The following reference teaches execution of trial data.

- US 2002/0006133 A1 (*Kakemizu et al. teach the AAAH authenticates the mobile node according to the AMR message, stores the binding update message and a service profile of the mobile node in the header of the IPv6 packet, and transmits the packet to the home agent*)
- US 6,374,295 (*Farrow et al teaches a method and apparatus for managing IP addressing in a network and effectively synchronizing communication between a central database and one or more servers (such as DNS and DHCP).*
- US 2002/0052876 A1 (*Waters teaches a method and apparatus for managing IP addressing in a network and effectively synchronizing communication between a central database and one or more servers (such as DNS and DHCP).*

- US 6,427,170 (*Sitaraman et al. teach A method and apparatus for managing dynamic IP address allocation in a data communications network having a point of presence, a network access device associated with said point of presence, and user connections to users formed through the network access device*).
- US 6,614,788 B1 (*Martin et al. teach Network address (e.g. IP address) allocation under first and second protocols (e.g. RADIUS and DHCP) is achieved using a directory service*).
- US 2006/0104280 A1 (*Carolan et al. teaches Method and apparatus for coordinating a change in service provider between a client and a server with identity based service access management*).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guang Li whose telephone number is (571) 270-1897. The examiner can normally be reached on Monday-Friday 8:30AM-5:00PM(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

May 10, 2008

GL

Patent Examiner

/Bunjob Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2152